Remarks

<u>Claim rejections 35 USC § 102</u>

Applicants respectfully traverse the rejection made in the Office Action. The rejection errs in alleging that Page's proxy has a hierarchical directory: in fact the hierarchical directory pointed to in the rejection is located elsewhere in Page's system. Applicants further argue that Page's proxy in fact lacks any such directory (and therefore works in a different manner to the claimed proxy agent).

To ensure absolute clarity on these points, and to permit a common understanding with the Examiner, some basic terms will be defined for use in the discussion which follows.

Clearly, both Page's system and Applicants' described system share the same overall architecture, i.e. each has a number of networked devices managed by a management server or directory server, with a proxy in between to translate between protocols. To simplify the following discussion, therefore, the following common terminology will be used for the main components of such systems, namely the directory server, the managed devices, and the proxy.

<u>"Directory Server"</u>: This is the server which stores and maintains the settings and capabilities of the managed devices under its management. In Page (Figs. 2 and 5), this is the "directory server 25". In the present application, the directory server is implemented as a network management system (NMS) 12 and its associated database or management information base (MIB) 13, as described at page 8, lines 22-25.

<u>"Managed Devices"</u>: These are items such as printers, routers, and so on which are connected to the network and for which the directory server stores settings and capabilities. By issuing appropriate commands and queries, the directory server can manage and control such devices (with the assistance of the proxy as an intermediary). Page shows these examples of such managed devices as "SNMP device 30 (16,17)" and "Hybrid device with embedded LDAP client and

SNMP 31(15)" in Figs. 2 and 5. The present application refers to them as "Non SNMP network element 14" in Fig. 4.

"Proxy": The proxy translates between the protocol used by the directory server and the protocol used by the managed devices. Page refers to this as the "directory proxy 29", while the present application refers to it as the "proxy agent" or simply "proxy 150". This is the claimed "proxy agent" of claim 1, of course.

With those terms in mind, Applicants submit that (i) the "hierarchical directory" in Page's system is located in a directory server connected to a proxy, not in the proxy itself as required by the claims under examination; and (ii) Page's proxy is of the general type shown in Fig.1 of the present application, which Applicants describe as a conventional proxy, i.e. it has a translator which is ignorant of any hierarchical directory structure, and therefore suffers from the shortcomings described in relation to the system of Fig. 1 of the present application.

In the following discussion, references to a hierarchical directory, and to the fact that such a directory is lacking from Page's proxy, should be taken as a shorthand reference to:
- a directory for storing data components
- the directory supporting a hierarchical data structure
- each stored data component being associated with a respective position in the hierarchical data structure.

1) Page's hierarchical directory is part of the directory server, not the proxy

Applicants' last response argued that Page's proxy had no hierarchical directory. This argument was not directly rebutted in the final Office Action, but the wording of the rejection was updated to include a specific reference to column 2, lines 38-59, where such a hierarchical directory could allegedly be found in Page et al.

However, this passage clearly describes (and concentrates exclusively on) a directory server. It simply describes how such a directory server organizes its descriptions of device settings and capabilities in a hierarchical manner. An example

is given of how each managed device finds its place within the structure, e.g. the directory branch for network printers has a sub-branch for ink jet printers, which in turn has a plurality of entries for storing the settings and capabilities corresponding to each of the ink jet printers on the network. The passage is of no relevance to a proxy in such a managed system.

Claim 1 of the instant application is concerned only with the proxy (or "proxy agent"). The entire argument in the Office Action's rejection stands or falls on whether Page discloses a proxy having the required directory with a hierarchical data structure. Because the passage relied on does not fulfil the heavy burden imposed on it, the rejection falls on a fundamental point – Page contains no description of a proxy with a hierarchical directory as claimed in claim 1, and Page only foresees the directory server itself as having such a hierarchical directory.

2) Page's proxy is blind to directory structure

The conclusion above is determinative of the issue of anticipation, but Applicants wish to make a further point. The description of how Page's proxy operates leaves no doubt that it simply translates from one protocol to another blindly, and without any understanding of or awareness of a hierarchical directory structure according to which the managed devices may be organized.

First, one can compare Fig. 1 of the present application with Fig. 5 of Page et al. In each case there is a directory server communicating with a first protocol handler or client, and there are managed devices communicating with a second protocol handler or client. The protocol handlers form part of the respective proxies, and translation is provided between the two protocols in each proxy.

Page uses the "LDAP/SNMP translator 64" for this translation, while the present application uses the "mapping component 22" with the aid of the "mapping definition 24" and "cache 26". Both translation facilities operate the same, however: they simply translate commands, queries and responses from one protocol into the corresponding commands, queries and responses of the other protocol.

The fact that Page's translator 64 operates blindly and without any knowledge of the directory structure maintained by the directory server, can be seen from the following description of operation at column 15, lines 18-31, which describe the operation of the translator 64 when a new device has been located on the network.

> *Translator 64 formats the device's information into LDAP format, communicates with LDAP client 60 and sends the LDAP formatted SNMP device's information to LDAP client 60 (step S707). LDAP client 60 then establishes communication with directory server 25 to self publish the SNMP device's information to the directory server (step S708). LDAP client 60 first utilizes an LDAP_ADD command to attempt to add the SNMP device's information in directory server 25. If an entry for the SNMP device is already present in directory server 25, then an error message is returned by the directory server to LDAP client 60. LDAP client 60 then utilizes an LDAP_MODIFY command to replace the directory entry information in the directory entry of directory server 25 for the existing device.*

The translator 64 and the LDAP client 60 are clearly working with no knowledge of the directory structure employed by the directory server, since they simply attempt to add information without knowing whether the device is already in the directory server's hierarchy or not. If the LDAP_ADD procedure succeeds, then the information is added, while if it fails, the client is programmed to retry using a MODIFY command. If the proxy's translator or the proxy's client 60 had a copy of the hierarchical directory maintained on the directory server, then this trial-and-error update procedure would make no sense. The same trial-and-error attempt at adding and then modifying directory entries, incidentally, is repeated throughout the description.

Conclusions
In conclusion, the argument made in the last response is reiterated: the proxy of Page et al. has no hierarchical directory as required by claim 1.

Addressing the modified rejection put forward by in the final Office Action, the hierarchical directory pointed to in column 2 of Page et al. is part of the directory server, not the proxy.
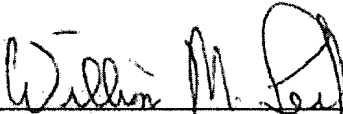
Finally, the description of how the Page et al. proxy operates demonstrates that it has no hierarchical directory capabilities or knowledge, and simply translates commands from one format to another without employing the hierarchical directory features set out in claim 1.

The arguments made above in relation to claim 1 apply equally to independent claim 18, and to each of the dependent claims which share at a minimum the features of the independent claims from which they depend.

In view of the arguments made herein, the applicants respectfully request the examiner withdraw the rejections, and allow the application.

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